double exposure which comprises a first step for exposing the insulator with a normal mask with original via size and a second step for exposing the insulator with the mask with larger via size. The order of these two masks being used can be reversed.

- The probability that different contaminations hit the same location is negligible and thus the pin-holes can be eliminated effectively by exposing the insulator twice with the different masks.
- The reason why the two masks should have different via sizes is from the tolerance of mask positioning. The second mask has to have larger via size to maintain the via size formed by the first mask.
- This method is applicable for any negative photo-sensitive polymers, for example, etching resist, pattern plating resist and so on.

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DISCLOSURE TEXT:

Disclosed is an exposure method for reducing defects of PCB (Printed Circuit Board) with photo via holes formed by a negative-type photo-sensitive dielectric. For negative type photo-sensitive dielectric, contamination at exposed regions causes defects such as pin-holes. Such defects can be solved by double exposure with different masks.

- In a photo process in which a negative-type photo-sensitive insulator is used to define vias, contamination on the mask, mask cover film or other parts which lie in the light path results in the formation of pin-holes in the insulator. These pin-holes become serious defects from the point of reliability and electrical performance.

- The defects caused by such contamination can be eliminated by